JACOBS AIRCRAFT ENGINE COMPANY

MODELS: Jacobs L-4 series and Military R-755-9

T.C. NUMBER: T.C. 121

Model	L-4	L-4M, -4MA, -4MA7	L-4MB
Type	7RA Direct drive	- - - -	- - - -
Rating:			
Maximum continuous, hp, rpm, at S.L. pressure altitude	225-2000-S.L.	- - - -	- - - -
Take-off (5 minutes), hp, rpm, at full throttle	245-2200	- - - -	- - - -
Fuel (minimum octane aviation gasoline)	73	- - - -	- - - -
Bore and stroke, in.	5.25 x 5.00	- - - -	- - - -
Displacement, cu. in.	757	- - - -	- - - -
Compression ratio	5.35: 1	- - - -	- - - -
Weight (dry), lbs.	505	507	520
Propeller shaft, SAE No.	20	- - - -	- - - -
Carburetion	Stromberg NA-R7A carburetor with 2-1/16 in. venturi	- - - -	- - - -
Ignition, dual	Bosch AFV or Scintilla WL7A battery ignition units	Scintilla MN7-DF, VMN7-DF, MN7-DF5 or VMN7-DF5 magnetos	Combination Scintilla MN7-DF5 or VMN7-DF5 magnetos and Scintilla WL7A or Bosch AFV battery ignition unit
Ignition timing, degrees BTC	30	- - - -	- - - -
Spark plugs	BG-4B2(s), 174(S), SS54, SS485, Bendix 9ES2, 437J.	- - - -	- - - -
	Champion M3-1S, C-27S	- - - -	- - - -
NOTES	1, 4, 6, 7	1, 2, 3, 4, 6, 7	1, 4, 5, 6, 7
Certification basis	Type Certificate No. 121		
Production basis	None. The manufacturer no longer holds a production certificate for engines under this type certificate; therefore, each engine produced subsequent to February 20, 1957, is subject to a detailed inspection for workmanship and conformity with the approved data by a FAA representative. In addition, the engines must have a satisfactory run-in including at least 5 hours at rated power and speed. Upon satisfactory completion of the above, the representative shall tag the engine with Tag Form ACA-186.		

NOTE 1. Maximum permissible cylinder head, barrel and oil inlet temperature, 550 degrees F., 325 degrees F., and 200 degrees F., respectively.

NOTE 2. The approval of model L-4MA expired 12/9/42. No engine of this model manufactured after

that date or with serial numbers above 661 are eligible for use in certification aircraft. This model is similar to model L4M except that it incorporates autogyro rotor drive gears which entails a weight increase of 3 lbs.

NOTE 3. Model L-MA7, similar to the L-4M engine, is eligible at weight (dry) of 506 lbs. This model engine incorporates autogyro rotor drive gears, a 2-piece main crankcase and other minor modifications.

NOTE 4. Eligible with aluminum rear and front crankcases and main bearing plate replacing the magnesium parts with a possible weight increase of 11 lbs. Engine dry weights listed above include starter drive, generator drive, one pump drive, and the following:

Accessory drive unit - 1 pump drive (L-4MB only)	3 lbs.
Radio shield ignition (standard equipment on later engines)	10 lbs.
Automatic valve gear lubrication (standard equipment for engines above No. 4571, including all R-755-9 models)	7 lbs.
Propeller oil transfer sleeve (standard equipment for engines above No. 4571, including all R-755-9 models)	3 lbs.
Generator and control (15 amp.) (L-4 and L-4MB only)	17 lbs.

NOTE 5. Military engines, model R-755-9, otherwise identical to the L-4MB engine, incorporate AN type spark plug elbows and special carburetor control level arms. The designations L-4MB and T.C. No.
121 should be included at the first opportunity on the designation plate of these military engines when installed in certificated aircraft.

NOTE 6. The following accessories are eligible for use on the specified engine models at the indicated additional or substitute weights:

	Weight	Engine Models			
Optional Accessories	(lbs.)	L-4	L-4M	L-4MA7	L-4MB
Governor - Hamilton Standard hydraulic propeller governor model 1A4 (including drives)	5	Yes	- - - -		- - - -
Hydraulic pump - Pesco model 320F	2	Yes			- - - -
Fuel pump					
- Pesco model M-400A	2	Yes			- - - -
- Pesco model B-400BLY (4 stud pad) or Romec model RD-4140	2		Yes	- - - -	- - - -
- Pesco type R-400-BLH or Romec type C-16 (3 stud pad)	2	Yes	- - - -	- - - -	- - - -
Vacuum pump - Pesco B-2A (Model 194-C or 194-B) or Romec Type B-2A (Model RD2112)	4	Yes	- - - -	- - - -	- - - -
Generator					
- Eclipse type D (25 amp, 12 volt) and control	26	Yes	- - - -	- - - -	- - - -
- Eclipse type LV-180 (15 amp) and control	17	Yes	- - - -	- - - -	- - - -
- Bosch type GEG (6 amp) and control	12	Yes	- - - -	- - - -	- - - -
- Leece-Neville (25 amp, 24 volt) and control	27	Yes	- - - -	- - - -	- - - -
Starter - Eclipse Series E-80, Type 397	19	Yes	- - - -	- - - -	- - - -
Accessory drive unit including					
- 3 pump drives	6	Yes			- - - -
- 2 pump drives	5	Yes			- - - -
- 1 pump drive	3	Yes	- - - -	- - - -	Std.
Propeller hub (fixed pitch)	15	Yes	- - - -	- - - -	- - - -

*The L-4, L-4M, and L-4MB models are eligible for optional use of 2-position hydraulically controllable propeller when the control valve is used in lieu of the constant speed governor.

NOTE 7. The following accessory drive provisions are available:

Drive	Drive of Rotation	Drive Ratio	Maximum torque Inch-Pounds Continuous	Maximum torque Inch-Pounds Static	Maximum Overhang Moment Inch-Pounds
Starter	CCL	1.5: 1	- - - -	5500	100
Generator	CCL	1.4: 1	50	300	110
Fuel pump (rear crankshaft)	CL	1: 1	20	150	- - - -
Tachometer	CCL	5: 1	- - - -	- - - -	- - - -
*Vacuum pump	CCL	1: 1 OR -875: 1	30	200	- - - -
*Propeller governor	CCL	1: 1	30	200	- - - -
*Hydraulic pump	CCL	1: 1 OR -875: 1	30	200	- - - -
*Fuel pump	CCL	1: 1	30	200	- - - -

All directions of rotation are given facing engine drive flange.
*Accessories marked with an asterisk are mounted on accessory drive unit.
The total continuous torque taken off all the drives on the accessory drive unit should not exceed 70 inch-pounds.
Overhang moment for drive pads not listed is not critical provided accessory weights listed in NOTE 6 are not exceeded.